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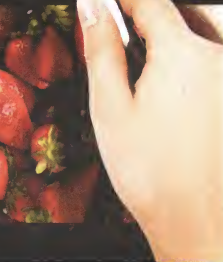
NATIONAL
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WHAT
WE EAT
HAS MADE
US WHO
WE ARE

**THE STORY
OF FOOD**



\$4.95



ON SALE THROUGH NOV. 17

SPECIAL EDITION



"What makes food really personal is that food makes you think," chef Marcus Samuelsson says. "Who are you?"

PHOTO: JEFFREY M. HARRIS FOR USA TODAY; FOOD STYLING BY USA CHERKASKY

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sugar may be killing you

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ON THE MENU

PREPARE OR PERISH

LIFE BELOW ZERO°

THE THAW

NEW SEASON
TUESDAYS 9/8c
STARTS NOV 4



NATIONAL
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natgeotv.com/LifeBelowZero



The history of "food history" on TV can pretty much be summed up this way: A famous chef cooks up something delicious, and then that something ... is history. For one reason or another, in more than 50 years of televised

Stephanie Montgomery
National Geographic

cooking, no network or show has ever tackled one simple question: Why am I eating this? National Geographic Channel will change this with the six-part miniseries *EAT: The Story of Food*, which premieres over three nights beginning Nov. 21 at 9 p.m. ET/PT. It's a freewheeling look at the surprising history, the unexpected heroes and the cornucopia of science that will take our feeding into the future.

Food is as broad a subject as air — and just as challenging to tackle. Food means something different to every person in every culture in

Let's talk about FOOD

Few things are as universal, personal and individual as eating

every country. So the producers of *EAT* decided that *they* wouldn't try to tell you why food is important. Instead, they sought out 70 of the world's most articulate and thoughtful "foodies," including chefs, authors, historians and scientists, and interviewed them exhaustively on the topic — to the tune of 3,000 pages of transcripts. From there, they distilled the conversation into six major themes, each of which underlies an episode of the series: meat, seafood, sugar, grains, junk food and food revolutionaries. In essence, the insights of these contributors dictated the content of the series.

The result, says executive producer Erik Nelson, is "both profound and savory." The miniseries careens from topic to topic, mixing deeply personal insights with cutting-edge science and unexpected historical anecdotes on a topic that many take for granted.

"I call it democratic filmmaking."

▶ STORY CONTINUES ON 5



SYLVIA BECTOR
OUTCUT FREE PRESS

How do you take
your hot dog?
And what, if any-
thing, does that
say about you?

APPETIZER

Everybody eats, but everybody eats differently

► CONTINUED FROM 4

ing," Nelson says. "No one 'directed' this program; instead, we curated a conversation about food, letting the conversations with these amazing men and women be the guide."

Lending their voices are José Andrés, Dan Barber, Padma Lakshmi, Nigella Lawson, Graham Elliot, Curtis Stone, Michael Pollan, Nathan Myhrvold, Rachael Ray, Eric Ripert, Ruth Reichl, Richard Wrangham, Marcus Samuelsson and Simon Majumdar.

There is no single takeaway message from *EAT: The Story of Food*, nor is there supposed to be. "I think as an overall piece of work, it reconnects us to the topic at hand," Nelson says. "It doesn't just make you hungry from the food we're showing you; it makes you hungry to learn more and read more about this necessity of life that we too often take for granted."

INTERVIEW HIGHLIGHTS



USA TODAY

"When we court each other, when we are celebrating a marriage, when we are celebrating a birth, when we are burying our loved ones, what do we do? We bake a casserole. We ask someone to dinner. We plan the wedding buffet. Every major event in a human being's life is centered around food in some way."

— Padma Lakshmi, left, television host

"I think food is what brings us together as a community. We all eat at least three times a day. It is the one thing we all have to do. And since we have to do it, it seems to me that it behooves us to do it with as much care and thought and dignity as we possibly can."

— Ruth Reichl, food writer



BRavo

"Without food, none of us are here to talk about it."

— Curtis Stone, above, chef

"Food is a looking glass into that culture. Wherever you're at, whatever country or city or even neighborhood that you're in, find where the locals eat, and go and try that. You really understand who those people are."

— Graham Elliot, chef

"Who knows if you live more than once — but if you only go around once, it's nice to have a little taste of all things."

— Rachael Ray, television personality

"Cooking at one level is a science experiment. It's the only science experiment people routinely perform at home. You can actually make stuff."

— Nathan Myhrvold, author

"I think eating is one of those things that's a human requirement, but it's the one thing you have control over. You're not making your own clothes, you're not building your own house. You're making your own food."

— Noah Fecks, author and photographer



NATIONAL GEOGRAPHIC CHANNEL/ISTOCK

Food is a kind of alchemy. Combine potatoes, oil and salt, for example, and somehow you end up with an addictive snack food.



NATIONAL GEOGRAPHIC CHANNEL/ISTOCK

Whether it's sushi in Japan, sausages in Germany or sriracha in Southeast Asia, food is often a marker of identity. It is a way of defining who we are.

"What makes food really personal is that food makes you think. What tribe are you? Who are you? Who are we as a family? Who are we as a community? And what does this specific dish mean to us?"

— Marcus Samuelsson, chef

APPETIZER

Oh, we want to eat healthy, but we find it isn't so simple

Americans are reluctant to give up favorite foods, and cost is also a factor

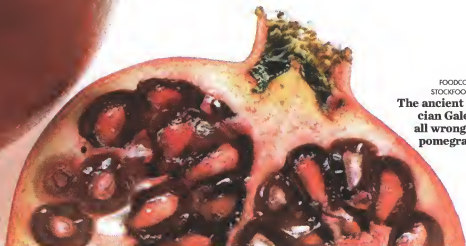
By Patrick J. Kiger

Special for National Geographic and USA TODAY

Humanity has known since ancient times that eating right is important to health. In the late first century A.D., for example, the physician Galen wrote a treatise whose title sounds like a modern diet best-seller: *On the Power of Foods*. Galen's advice, though, seems a bit odd today: He recommended eating pork to build strong muscles and believed that apples, peaches and pomegranates had little nutritional value because they passed through the body too quickly.

Fortunately, scientists since then have acquired a vast amount of knowledge about the role nutrition plays in maintaining our bodies. A well-balanced, moderate diet — along with other factors such as good genes and a lifestyle that includes sufficient physical exercise and

► STORY CONTINUES ON 7



FOODCOLLECTION/
STOCKFOOD AMERICA
The ancient physician Galen was all wrong about pomegranates.

WHAT WE EAT



Fresh fruit is full of vitamins and fiber, tastes good, and comes in its own wrapper. BRETT J. ROSSMAN FOR USA TODAY

A good diet is easier to understand than follow

► CONTINUED FROM 6

sleep — can help us to live longer, more enjoyable and more productive lives. We also know that poor eating choices — such as excessive consumption of calorie-rich foods, sodium and sugar, and insufficient amounts of nutrient-rich fruits and vegetables — are a major factor in serious health problems that plague wide swaths of the U.S. population.

SOUND ADVICE NOT FOLLOWED

The news media deliver a cacophony of conflicting advice about what we should or shouldn't be eating. But advice from nutritionists in the federal government's *Dietary Guidelines for Americans 2010* is pretty straightforward. We're urged to keep our calorie consumption in proportion to our physical activity — typically, 1,600 to 2,400 calories daily for women and 2,000 to 3,000 for men — and to avoid processed foods high in solid fats, refined sugar and sodium. We're advised to eat nutrient-rich foods such as vegetables, fruits and whole grains, fat-free or low-fat milk and milk products, seafood, lean meats and poultry, eggs, beans and peas; and nuts and seeds.



There may be hope for us yet: Researchers say Americans are eating more healthy fruits, whole grains and nuts. ELLEN BLASS, USA TODAY

The *Journal of the Academy of Nutrition and Dietetics* says, not surprisingly, that too few Americans follow that advice. It reports that 82% of Americans say they don't eat better because they can't bear to give up foods they like, even those they know are not good for them.

Cost is another factor. A 2013 study by Harvard University School of Public Health researchers found that a balanced diet rich in fruits, vegetables, fish and nuts cost, on average, about \$1.50 more a day per person than a typical American diet heavy in processed foods, meat and refined flour. That's \$550 more a year, and for some families struggling economically, that's a difficult choice to make.

But the long-term cost of bad eating on our health is greater: The U.S. Centers for Disease Control and Prevention reports that more than a third of U.S. adults are obese, and their weight problems pre-

dispose them to serious health problems such as heart disease, stroke, type 2 diabetes and certain types of cancer. Treating each dangerously overweight person for such ailments adds more than \$1,400 to their medical costs.

PASS THE SALT

Another dilemma is Americans' overconsumption of sodium, a preservative and flavor-enhancer in many foods. According to the CDC, high sodium intake raises blood pressure, a major factor in heart disease and strokes, which rank first and third among causes of death in this country. While we're advised to limit our sodium intake to 2,300 milligrams daily — 1,500 for people over 50 — the average American over the age of 2 consumes 3,436 milligrams, and the amount of salt in our food has been rising steadily.

The news isn't all bad, with growing

evidence that diet modification can improve health problems. Studies have shown, for example, that switching to a vegetarian diet can reduce a person's blood pressure. A 2006 study by University of California-San Diego researchers found that women who were breast cancer survivors were able to reduce their estrogen levels — a factor in preventing cancer from returning — by eating a diet rich in fiber from fruits and vegetables.

There are signs that we are belatedly coming around to paying more attention to what we eat. Harvard researchers found that, while we're still consuming too much salt and too few vegetables, we've cut our consumption of dangerous trans fats and are drinking fewer sugar-sweetened beverages. Better yet, we're eating more healthy fruit, whole grains and nuts.

Hopefully, that's the start of a trend.

WHAT WE EAT



LARRY CROWL/AP

Lobster was once a food considered suitable only for the lower classes. It wasn't until 19th-century railroads began selling it as "exotic" that it became a delicacy.

Tasty nuggets from food history

SPAM SAVES THE RED ARMY

A couple of years after Hormel introduced Spam in 1937, Hitler plunged the world into war. Food was rationed. Everyone made sacrifices. Nylons, coffee, cigarettes and basic necessities were in short supply. But in the U.K. and the Soviet Union, there was plenty of Spam, as the U.S. shipped more than 100 million pounds of the canned meat abroad to help feed the Allies. Nikita Khrushchev, the Soviet leader in the early 1960s, said, "Without Spam, we wouldn't have been able to feed our army." Since the 1930s, more than 7 billion cans have been sold — and it's still selling strong. In fact, Americans eat, on average, 2.8 cans per second.

BLUE-COLLAR CAVIAR

There was a time when sturgeon, the fish whose eggs become caviar, were so plentiful that caviar was served as a free

bar snack, similar to the nuts put out in pubs today. Caviar was salty, which made the patrons thirsty, so they bought more beer. By the end of the 19th century, however, the overfished sturgeon had virtually disappeared from the rivers of Europe and the Americas. As demand outstripped the dwindling supply, the price of caviar doubled between 1900 and 1915, helping make it the luxury item it is today.

PYRAMIDS BUILT ON BEER

In ancient Egypt, there were plenty of jobs available — building pyramids for royalty. And while the work might not sound great by today's standards, a skilled worker could essentially get a job for life, since it might take 20 years to build a single pyramid (and people didn't live long). At the end of a long day, workers got their wages: bread and beer. Because people were paid with these things, the words became synonymous with prosper-

ity and well-being. Ancient Egyptians identified them so closely with the necessities of life that the phrase "bread and beer" was also used as an everyday greeting, like wishing someone good health.

HOW LOBSTER GOT FANCY

Mention a lobster dinner, and people tend to think of expensive fare in high-end restaurants. But that wasn't always the case — in fact, far from it. Until the 20th century, lobster was thought of as trash food, fit for only the poor and fed to servants, prisoners or farm animals. Then railroad companies had a realization: They could serve it in their club cars and sell it to passengers unfamiliar with the creature as a rare and exotic item. The Santa Fe Railroad and others would load up with lobster at the coast, where it was cheap, and serve it once they hit the Midwest. Passengers who didn't know the backstory loved it and began to ask for it

even after they left the train. Thus began lobster's transformation.

PERFECTLY AWFUL CANDY

In April 1937, Army officials presented chocolate magnate Milton Hershey with a bizarre request. They wanted candy bars with very specific properties: They had to weigh no more than 4 ounces; they had to withstand high temperatures; and most important, they had to taste bad. These bars were intended for use only as emergency rations — a food of last resort when literally nothing else was available. So the Army had to make sure soldiers wouldn't eat them unless absolutely necessary. Hershey delivered — and the "D-Ration" became so detested that troops in World War II called the bars "Hitler's secret weapon." Even so, D-Rations became an icon of American goodwill, as U.S. troops handed them out to hungry civilians across war-ravaged Europe.

DID YOU KNOW?

the word "carnival"
originally meant a **farewell to**

MEAT

referring to the Christian tradition
of giving up meat during Lent



THREE NIGHTS STARTING
FRIDAY NOV 21 9/8c

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NatGeoEat.com

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WHAT'S YOUR FAVORITE MEAL?

"My father would slice two very thin slices of bacon and put them right on the flat-top. Then the bacon goes inside two slices of toasted bread, and all the fat is released into the beautiful bread. That's it.
A bacon sandwich like no other."

— José Andrés, chef

"It's a family joke that all I ever do is roast a chicken. But the dish that is most resonant for me is a dish I call my mother's **Praised Chicken**, which is halfway between poached and braised. It's a very, very old-fashioned way of cooking a chicken that most cultures have when you put a chicken in a pot with some vegetables and water, cook it slowly, and in a sense you have a strong soup with a gently poached chicken in the middle of it. For me, that is the smell and taste of home."

— Nigella Lawson, chef

"My grandma's meatballs, because it's really the start of cooking for me. I would not have become a chef without my grandma's meatballs. It was not just when we ate them we loved them, but it was also the whole procedure of making them. It was something that taught me respect in the kitchen."

— Marcus Samuelsson, chef

"My favorite breakfast as a child was good **strong espresso** on a **Nabisco biscuit** with icy-cold or warm milk poured over it. I just don't feel complete without coffee. All of this is extremely ironic because I make the world's worst coffee."

— Rachael Ray, TV personality

"**Barbecue** is my favorite food outside of fish... The soul of barbecue is the smoke. Smoke is the most wonderful, transformative ingredient, because it is the only cooking method that actually becomes an ingredient in and of itself."

— Barton Seaver, chef and National Geographic Society Fellow

"If I had to eat one thing for the rest of my life, it would actually be my favorite dish in the whole world, which is a **red lentil dal** from India. We call it **LSD**, or 'life-saving dal.' It's a red lentil soup, and it's almost like our chicken soup. It's a food that nourishes body and soul."

— Simon Majumdar, author

"Fish and chips! What a marriage. I have no idea who started it, but what a thing to do."

— Curtis Stone, chef

"People often ask me, 'What's your favorite beer?' And in one of my books, I put 300 of my favorite beers. So I don't have a single favorite beer, but I have to say that if I ended up on a desert island for a month — not forever — I'd take Saison."

— Garrett Oliver, Brooklyn Brewery brewmaster

"I am loath to admit this, but I love **caviar**. There are many different kinds of caviar, but I personally like ossetra, which has a wonderfully fruity flavor. It's kind of fruit and salt, and it pops gently in your mouth and it's just the most delicious substance."

— Ruth Reichl, food writer

FAVORITE JUNK FOOD?

"I do have a favorite junk food. If we consider **gummy bears** junk food, I eat junk food."

— Eric Ripert, chef

"If I had to serve junk food to my group of friends, whether it's watching football or watching a movie or just catching up, it would have to be **pizzas and beers**."

— Ching He Huang, chef and television host

"I think my favorite junk food is a pack of **potato chips**, preferably salt and vinegar flavor, because it is a bit of an assault on the senses, which junk food can be."

— Nigella Lawson

"When it comes to junk food, my all-time favorite go-to is **Cheez-Its**."

— Graham Elliot, chef

WHAT'S THE FUTURE OF FOOD?

"I believe that the meat of the future is insects. We have this huge population of completely edible creatures out there that poor populations in other parts of the world have no compunctions about eating: ants and spiders and ant eggs and larva. I have eaten a lot of insects, and there is no reason to turn your nose up at insects. They're perfectly delicious."

— Ruth Reichl

"I would love to see the 'meat' of the future be more vegetables on a plate. We're never going to move away from a meat-based culture, but I think the real success will come from just shrinking the portion size of meat."

— Barton Seaver

"What I would like to see in the future is humans using more of the 250,000 edible plants that we don't consume. We could expand the flavor palate that is open to us by an awful lot just by eating more than just 150 or 200 different plants, which is what we limit ourselves to right now."

— Nicola Twilley, author

"I'm not optimistic about the future of nutrition in the United States, and there is one major reason: Congress and the food industry are working hand in hand. They claim to be protecting the public health, but what they are trying to do is to increase the output of food and increase the profit level of those industries. Let's put public health first."

— Paul Josephson, professor

FOOD FOR THOUGHT

FOOD NETWORK

Nigella Lawson loves her mom's "Praised Chicken." And potato chips (salt and vinegar).



"I love **popcorn**, and I love **potato chips**. I definitely love salty, crunchy snacks. But in my time, I've certainly eaten my fair share of **Oreo cookies**."

— Anna Boiardi, great-niece of Hector "Chef Boyardee" Boiardi

"My favorite junk food would be a good **hot dog**. I love a good hot dog."

— Roy Mitchell, pitmaster

"I am addicted to **salted peanuts**. I just, I love salt. Salt is probably one of the reasons why I'm already on blood pressure medication."

— Simon Majumdar

Junk foods that I would crave? No, me? Oh, yeah. There's a couple. **Reese's Peanut Butter Cups**. I freak out about those things."

— Eric Greenspan, chef

"I think one of the things we need to think about food is that we're caretakers. We don't own the world; we're caretakers for the next generation, the generation after that, and we have to teach good practices to our children as well."

— Simon Majumdar

"Part of the challenge for the future of seafood and the future is to change the culture around how we enjoy seafood. It's the same thing with how we enjoy meat. We've got to listen to what the ecological conditions are telling us that it wants to grow in the field, and we've got to listen more towards the ecology of the ocean."

— Dan Barber, chef



EAT: THE STORY OF FOOD

THREE NIGHTS STARTING FRIDAY NOV 21 9/8c

THE WORLD OF FOOD...

In six ready-to-watch portions



Meat, Your Maker

McDonald's sells 75 burgers per second. That's 4,500 burgers per minute!

McDonald's is the world's largest fast-food chain, with over 30,000 restaurants in more than 120 countries. It's a global phenomenon, and its success is a testament to the power of fast food.

Mad Science of Junk Food

Junk food makes up 1/4 of the U.S. diet.

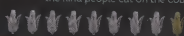


Slaves to Sugar

High-fat/high-sugar food stimulates the brain in the same way that drugs do.

Hooked on Grass

U.S. farms grow 90 million acres of corn, but less than 1% of it is sweet corn, the kind people eat on the cob.



Man vs. Fish

Light foods account for 90% of all allergic reactions: milk, eggs, peanuts, tree nuts, soy, wheat, fish and shellfish.



Cash Crops

Globally, it is estimated that approximately 1/3 of food produced is wasted before it reaches consumers.



Hungry for More?

So is chef Eric Greenspan

Don't miss

ERIC GREENSPAN IS HUNGRY

NEW SERIES
PREMIERING
MONDAY NOV 24
10/9c

IN 1492, COLUMBUS

Sailed the Ocean Blue

Columbus was looking for spices (and India) when he landed in the Americas.



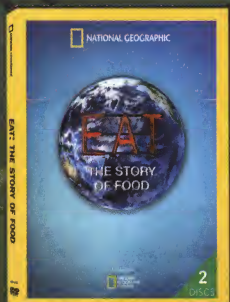
A TIMELINE OF GREAT EVENTS in Food History





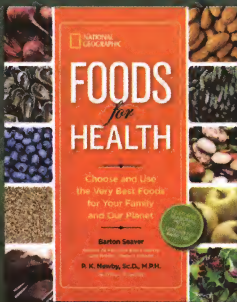
There's more to food than what's on your plate.

Feed your culinary imagination and celebrate all things food with these books and DVDs!



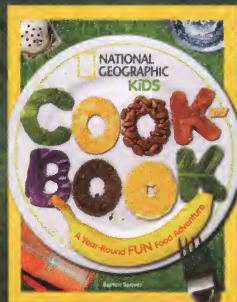
EAT: THE STORY OF FOOD DVD

The epic story behind food and how it made us "us"



FOODS FOR HEALTH BOOK

Choose and use the very best foods for your family and our planet.



NAT GEO KIDS COOKBOOK

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Christopher Columbus (c. 1450-1506) opened up a whole new world of possibilities for European cuisine.

SCALA/ART RESOURCE

Christopher Columbus

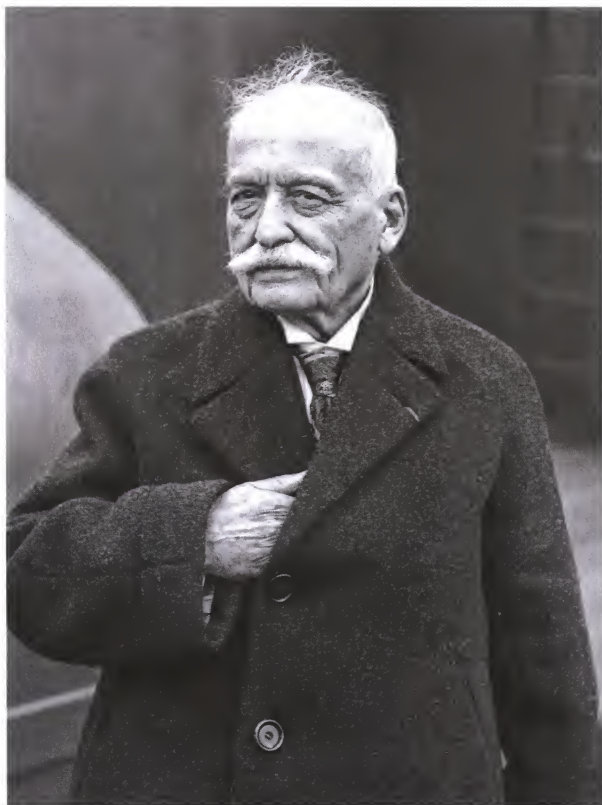
In the late 15th century, this Italian mariner was pitching to European royalty his idea of sailing west across the Atlantic to find a new route to India. One of his big selling points was the prospect of obtaining more of the spices — such as ginger, cinnamon, cloves, saffron and pepper — that Europeans depended on to make their food more flavorful and, to a lesser extent, to serve as antibacterial agents and prevent spoilage.

When Columbus reached the Caribbean (which he believed to be Asia), he didn't get his spices but instead found a rich cornucopia of foods previously unknown to Europeans, from corn, navy beans and chili peppers to guava, papaya and pineapple.

The foodstuffs that Columbus and subsequent explorers and conquerors brought back across the Atlantic — such as tomatoes and chocolate — revolutionized the European food supply and diet, forever altering the cuisine. Some of those foods, such as the potato and the peanut, were brought from South America to Europe and then eventually made their way back across the Atlantic to North America.

FOOD REVOLUTIONARIES

History's culinary trailblazers and how they changed our lives



Auguste Escoffier (1846-1935) was known as "the king of chefs and the chef of kings." He's pictured in 1926.

Auguste Escoffier

Born in the south of France in 1846, Escoffier began working as an apprentice in his uncle's restaurant when he was just 12 years old. By the time he was 19, he had ventured to Paris, the center of the culinary world, to train as a chef and work in elite restaurants and dining clubs. It was there that he became the great modernizer of menus and cooking techniques.

Before Escoffier, the "grande cuisine" of the time was a total mess, with overly complicated, extravagant recipes drenched in sauces and garnishes that made it difficult to even taste the main ingredients. Restaurant kitchens were also chaotic, in terms of structure and, unfortunately, cleanliness.

Escoffier changed all that, championing the idea of fresh, simple, nutritious dishes prepared by an orderly brigade of professional chefs and helpers who were as fastidious about sanitation as they were about following recipes precisely.

FOOD REVOLUTIONARIES

History's culinary trailblazers and how they changed our lives



Clarence Birdseye (1886-1956) revolutionized meal planning with frozen food that tasted close to fresh.

Clarence Birdseye

Born in Brooklyn in 1886, Birdseye grew up hunting and practicing taxidermy. After studying biology in college, he moved to Labrador in northeastern Canada with the intention of buying and selling furs for a living.

During the harsh winter there, he observed that the extremely cold temperatures enabled the native fishermen to freeze their catches quickly while leaving the appearance, taste and texture of the fish intact. Birdseye tried freezing cabbages in this fashion and found that it preserved them the same way.

After he returned to the USA, Birdseye started his own company, using recently developed refrigeration technology to flash-freeze foods such as fish, meat and vegetables. These were then shipped in refrigerated boxcars and offered for sale in freezer display cases that he leased to grocers.

By the late 1940s, consumers had begun to buy refrigerators for their homes as well, and the frozen-food industry created by Birdseye enabled Americans to enjoy a much wider range of foods, including complete prepared meals.

FOOD REVOLUTIONARIES

History's culinary trailblazers and how they changed our lives



Hector Boiardi (1897-1985) became a household name — and face — as he took Italian food mainstream.

Hector Boiardi

Born in Italy in 1897, Boiardi began cooking at age 10. After immigrating to America in 1914, he worked at the Ritz Carlton hotel in New York City before moving to Cleveland, where he eventually opened his own restaurant, the Giardino d'Italia.

When his customers told him that they wished they could make dishes like his at home, Boiardi started sending them home with pasta, sauce and cheese and instructions on how to prepare the ingredients and cook them. In the late 1920s, he got the idea of manufacturing his sauce and selling it by the jar, emblazoned with his jovial, mustachioed likeness and a phonetic spelling of his name — "Boyardee."

The Chef Boyardee brand helped establish Italian cuisine as a staple in America and also helped popularize packaged, processed foods that took minimal preparation, a trend that revolutionized the American diet. Boiardi also became, in a sense, America's first celebrity chef, whose name and face were familiar to millions.

FOOD REVOLUTIONARIES

History's culinary trailblazers and how they changed our lives



Julia Child (1912-2005) taught America to cook in the French style in books and especially on television.

COURTESY OF PAUL CHILD

Julia Child

Born in Pasadena, Calif., in 1912, Julia McWilliams' first ambition in life was to be a writer. But after being fired from a home furnishings company where she worked in advertising, she moved to Washington, D.C., in 1941 and became a research assistant at the Office of Strategic Services, the World War II intelligence agency that was the forerunner of the CIA. After the war, she married Paul Child, a fellow OSS employee, and moved to Paris, where he had a job at the U.S. Embassy.

In search of something to do, Child became interested in French cuisine and managed to become a student at the famous Cordon Bleu cooking school. She and friends Simone Beck and Louisette Bertholle eventually started their own school and came up with the idea of writing a cookbook, *Mastering the Art of French Cooking*, that would introduce what they had learned to a larger American audience. When Child went back to the USA to promote the book in a public television appearance in Boston, the station got so many enthusiastic fan letters that she soon was offered her own program.

The French Chef, which premiered in 1963, became an enormous success and launched the trend of TV cooking shows, which over the decades has broadened to spawn entire networks devoted to food programming. In the process Child also helped create today's "foodie" subculture, in which cooking isn't just a functional skill, but a passionate hobby.

FOOD REVOLUTIONARIES

History's culinary trailblazers and how they changed our lives



DAVID ZALUBOWSKI/AP

Decisions, decisions: Although fast food menus have been improving nutritionally, food scientists say they still offer too little in the way of healthy options.

Fast food proves to be perfectly engineered for Americans' lifestyle

Patrick J. Kiger

Special for *NatGeo* and *USA TODAY*

If the old cliché that "you are what you eat" is true, we are double cheese-burgers, fried chicken, burritos, meatball subs and whatever else we can get in a hurry at a restaurant counter or a drive-through window for a few bucks.

In America's cornucopia, our love of fast food is the common denominator. According to a 2013 Gallup Poll, 8 in 10 of

us report eating at fast-food restaurants at least once a month, and nearly half of us do so weekly. In a nation often starkly divided on other matters, the taste for fast food cuts across age, gender, income and racial and ethnic groups. The biggest consumers are men ages 18 to 49 — 57% of whom wolf down a hasty meal from a paper bag at least once a week. As a nation, we spent \$157 billion at fast-food restaurants in 2012, says Yale University's Rudd Center for Food Policy and Obesity. That works out to \$1,335 per household.

Fast food may date back to ancient China, where all-night noodle shops were offering quickie meals at least 1,900 years ago. But fast food as we know it today emerged in Southern California after World War II, when the McDonald broth-



CHRISTOPHER SULLIVAN/AP

Fast food is typically loaded with fats and sugars — energy sources that the human body has evolved to crave.

ers opened a hamburger stand designed to be super-efficient, with burgers prepared on a kitchen assembly line and served on paper plates with plastic utensils. Their business, which they eventually sold to an entrepreneur named Ray Kroc, grew over the next half-century into an international giant with more than 18,000 outlets around the world. Meanwhile, Kentucky-based culinary innovator Harlan Sanders sped up the chicken-frying process by using a new invention, the pressure fryer. It was the start of another fast-food chain, now known as KFC, which would expand to more than 17,400 locations worldwide.

There are some obvious reasons we

► **STORY CONTINUES ON 19**

DRIVE-THROUGH NATION



Travel down a major street — in Erie, Pa., above, or anywhere else in the USA — and you'll likely see a fast-food outlet or twelve, their logo signs sprouting like dandelions.

Too busy? Drive up, and dinner is served

► CONTINUED FROM 18

love fast food so much. "It's easy, it's filling and it's convenient and inexpensive," journalist Eric Schlosser, author of the 2001 book *Fast Food Nation*, once explained in a CBS News interview.

But a good part of our fast-food obsession is chemistry. Menu items tend to be loaded with fat and sugar, which trigger powerful cravings. A single McDonald's Double Quarter Pounder with cheese, for example, contains 42 grams of fat — 65% of the total daily intake recommended by nutritionists, based on a typical 2,000-calorie diet.

Fast food also caters to an overloaded American lifestyle in which working parents are pressed for time. Cornell University researchers surveyed working parents from low- to moderate-income families and found that the demands of their jobs often left them scrambling to feed themselves and their children with takeout fare. More than half said they ate at least



Speedee the Chef, the original mascot for McDonald's, is still on duty at the chain's oldest location, in Downey, Calif.

1996 PHOTO BY BARRY FITZSIMMONS, LOS ANGELES TIMES, VIA AP



DAVID PAUL MORRIS, BLOOMSBURG

In a Gallup Poll conducted last year, 8 in 10 Americans said they ate fast food at least once a month, and nearly half said they did so at least once a week.

one fast-food meal each week.

Nutritional and medical experts increasingly have been warning about the effect of so much fast food on Americans' bodies. A study published in the *American Journal of Preventive Medicine* in 2013 found that fast-food restaurant menus, while they've improved nutritionally in recent years, still included far too few foods essential to a healthy lifestyle, such as vegetables, fruits and whole grains.

Fast-food fare also tends to be high in calories — a problem in a nation like ours where roughly a third of adults are obese. A study published in the medical journal *BMJ* reported that fast-food diners not only tend to purchase big meals, but also underestimate the caloric content of their choices by as much as 35%.

But that doesn't seem to deter us when we get a hankering for a hot, greasy container of french fries — even though, ac-

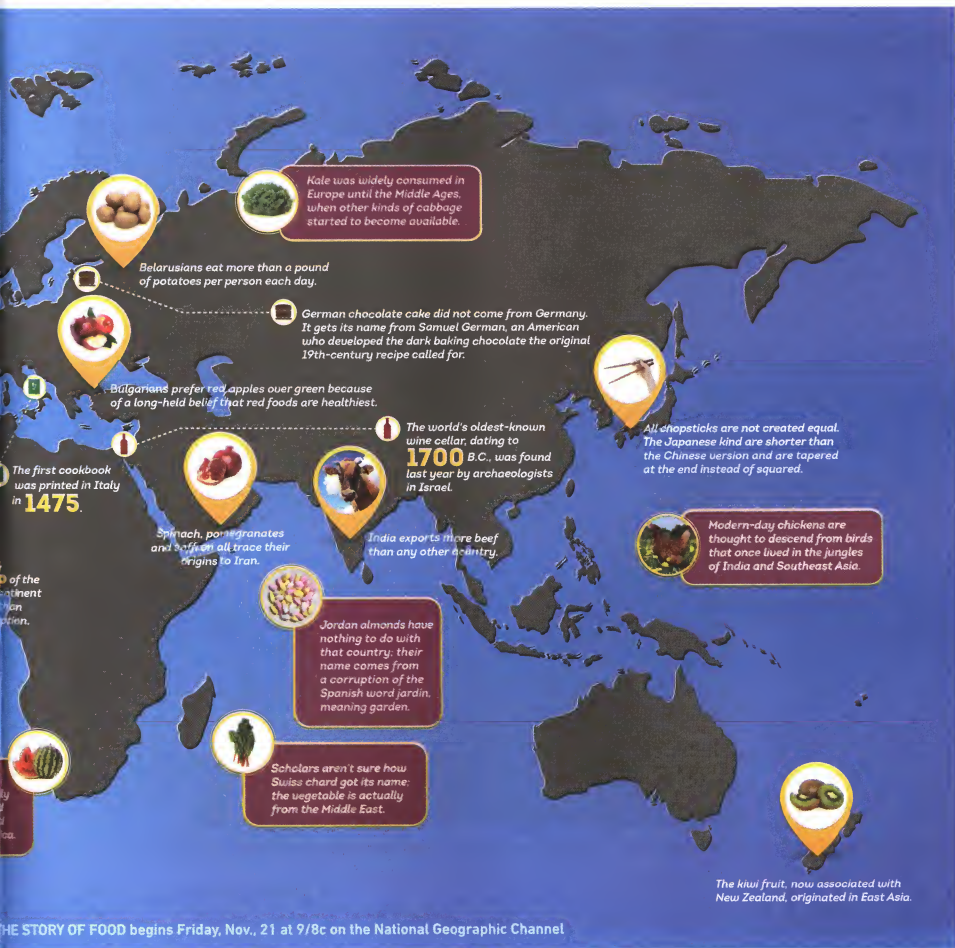
cording to Gallup, slightly more than three-quarters of Americans agree that fast food is "not too good" or "not good at all for you."

Our fast-food addiction may also be changing us psychologically. A study published in 2010 in the journal *Psychological Science* found that subjects who watched familiar fast-food restaurant logos flashed on a computer screen afterward tended to rush unnecessarily through tasks and display other signs of hastiness.

"Fast food represents a culture of time efficiency and instant gratification," wrote University of Toronto researcher Chen-Bo Zhong. "We're finding that the mere exposure to fast food is promoting a general sense of haste and impatience, regardless of the context."

DRIVE-THROUGH NATION





Your inner caveman says: Feed me sugar

Fondness for sweets — for energy, really — is product of evolution

Patrick J. Kiger

Special for National Geographic and USA TODAY

Perhaps you've noticed that Americans have a bit of a sweet tooth. Well, OK, more than a bit. The average American consumes about 130 pounds of various types of sugar a year.

But before you start feeling like the gluttonous Augustus Gloop in *Willy Wonka & the Chocolate Factory*, consider that your craving for the sweet stuff isn't entirely your fault. As it turns out, evolution made us that way, and our love of things that taste sweet once served an important purpose in human survival. It's only in the modern world, where sugary foods are plentiful, that our sweet tooth has developed into a health risk.

Long before soft drinks, chocolate-chip cookies and rocky road ice cream existed, our hunter-gatherer ancestors were genetically programmed with a taste for sweet foods, which were the most efficient sources of energy. As a result, according to modern research, about 40% of their diet consisted of fruit. Humans' bodies evolved so that, after sugar-laden foods are digested, bodies convert the sugar in the bloodstream into fat. This fat can be stored and called upon later for energy. Humans were better at converting sugar to fat than other primates were, which was necessary, because we had bigger brains that needed ample nourishment to function, and female humans produced offspring twice as fast as our



Sugar consumption in 1700 averaged 4 pounds per person per year. In the modern USA, it's about 130 pounds a year.

CRISKE, GETTY IMAGES/STOCKPHOTO

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SWEET!

Sugar gives chocolate a bad name

► CONTINUED FROM 22

close relatives the chimpanzees.

That all worked out pretty well, health-wise, because our primitive ancestors' hardscrabble existence didn't give them much opportunity to gorge themselves and then lie around on the couch watching TV. Also, unlike today's processed sweets, fruits are full of nutrients besides sugar, such as fiber, vitamins and antioxidants, as well as water, so they had other health benefits. There was one downside: Recent research cited in *New Scientist* found that early humans did have a problem with tooth decay, because they ground sweet acorns and pine nuts to make breads and porridges, which stuck to their teeth and nurtured bacteria whose acidic output eroded their enamel.

According to a 2013 *National Geographic* article by Rich Cohen, humans first started to consume sugar as we now know it about 10,000 years ago in New Guinea, where they picked sugar cane and chewed it and mixed sugar water in coconut shells to drink. By A.D. 500, sugar cane had made its way to India, where it was processed into a powder and used as a medicine for headaches and impotence.

In medieval times, sugar was discovered by the Muslim world and then by the Crusaders, who spread refined sugar's use to Europe. In 1493, on his second voyage to the New World, Columbus brought sugar cane along with him to plant. Eventually sugar became a gigantic cash crop for the European colonists, who imported African slaves to cultivate, harvest and refine it under brutal conditions. The vast supply of cheap sugar made it easy for consumers to get addicted to the sweet stuff. Average consumption per person increased from 4 pounds annually in 1700 to 100 pounds two centuries later.

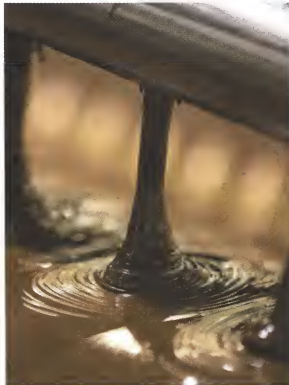
Although sucrose — common table sugar — remains the world's most popular sweetener, American cravings increasingly are satisfied by high-fructose corn syrup, a cheap substitute for cane sugar first introduced in the food and beverage industry in the 1970s. But as journalist Michael Pollan notes in his book *The Omnivore's Dilemma*, we still consume more sucrose than ever before, too.

Sugar in its various forms is added to a



EMMANUEL DUNAND/GETTY IMAGES

Studies suggest that unsweetened chocolate could be a health food. But when loaded with sugar and fat — not so much.



ANDREY ILIASHOV/BLOOMBERG



BRETT T. ROSEMAN FOR USA TODAY

Everyone knows that candy has plenty of sugar, but how about ketchup? Or ham? Added sugar turns up in all kinds of foods.

Humans have been consuming sugar as we now know it for about 10,000 years. They've been using it to create decadent desserts for a considerably shorter period of time.

surprising range of foods — not just cookies and soft drinks, but also bread, cereal, crackers, condiments, even ham. These "added sugars," as nutritionists call them, add about 19% to Americans' caloric intake, which is one reason so many of us are overweight. Some researchers also have argued that, because of the way high-fructose corn syrup is metabolized, it may cause fat to accumulate in the liver and ultimately lead to heart disease, diabetes and obesity, though that remains in dispute.

Added sugar even gives a bad name to another food: chocolate, which in its unsweetened version may be beneficial to health. A study published by the medical journal *BMJ* in 2011 found that people who ate small amounts of chocolate — fewer than two bars a week — had 37% less cardiovascular disease and a 29% reduction in strokes. Even so, researchers are reluctant to recommend chocolate as preventative medicine, because the sugar and fat content of chocolate bars could contribute to weight gain and diabetes.

The average American consumes about 11 pounds of chocolate a year, which is already more than the intake in the study. Just imagine if word spread that "Scientists say chocolate is a health food."

SWEET!

ERIC GREENSPAN IS HUNGRY

*Join Chef Eric Greenspan as he travels the backwoods of America
in search of the most outrageous and meatiest recipes.*



NEW SERIES
MONDAY NOV 24 10/9c



natgeotv.com

This caravan's for carnivores

Greenspan and pal travel back roads to culinary heaven

Eric Greenspan is, without a doubt, one of the funniest, loudest and most innovative chefs on the planet. But there's really only one thing you need to know about Eric: He's no vegetarian.

For his National Geographic Channel series *Eric Greenspan Is Hungry*, Eric set out with trusted friend and carnivorous gastronome Captain Mauzner on the meatiest, off-the-beaten-path road trip you'll ever see. On their journey, they discovered Ameri-

▶ STORY CONTINUES ON 26



PHOTOS BY NATIONAL GEOGRAPHIC CHANNEL

The show's title, *Eric Greenspan Is Hungry*, says it all. Crawfish croquettes are on the menu.

THE CHEF

Road trip is a meat and greet

► CONTINUED FROM 25

cana through rare homegrown family recipes, satisfied their wildest meat-centered dreams and found inspiration for Eric's critically acclaimed restaurants in Los Angeles, The Roof on Wilshire and Greenspan's Grilled Cheese. Traveling through the heart of America, they went directly to the source of local recipes to meet the people who farm, raise, nurture, hunt and butcher livestock such as bison, prehistoric gar, goat, crawfish, pig and cow. It's meat unlike anything you can get from your local supermarket. Eric talks about his travels:

If you could do an episode anywhere in the USA, where would you go?

I'd love to go to the badlands of the Dakotas — just so much rich history, especially with the Native people. If we are talking about American culture, Native people would be the right place to start. I'd love to hunt and cook way-old-school. Open campfire, frybreads, native stews, horseback. At least that's how I dream about it. Who knows? Could be totally different. That's why we go!

Who's the most memorable person you met on the road?

Of all the people we met, the most interesting had to be Gerard from Woodboro, Texas. Gerard loves his gar — a prehistoric fish. I mean, who loves gar that much?



Eric Greenspan's televised road trip provides inspiration for his L.A. restaurants, The Roof on Wilshire and Greenspan's Grilled Cheese.

We cooked gar for three hours. We ate gar for two. He never stopped talking about gar the whole time.

Why did you take Captain Mauzner on your road trip?

Why not? Captain Mauzner is my best friend since college. He's a screenwriter and a 40-year-old Brooklyn hipster. The best thing about Mauzner is that, while he seems so out of water, he really can fit in anywhere. He can warm any situation and make friends with anyone.

Are there any culinary techniques that surprised you?

I never had crawfish like at Duke's Restaurant in Breau Bridge, Louisiana. They keep

their crawfish live in a freshwater tank for 36 hours before they cook them, allowing them to shed that muddy — frankly, poop — taste that most crawfish boils cover up with strong-flavored... spice. But when purged, crawfish become so mild in flavor and texture. I never would have thought that freshwater purging would make such a difference. I don't get why everyone doesn't do it!

Did you find any great restaurants along your way?

We ate at some really great places on the trip. I loved Gus's World Famous Fried Chicken in Memphis. Kind of mind-blowing! It was the perfect balance of spice and crunch, juicy and fatty. It's the best fried chicken I've had, hands down.

How did you come up with the idea for this show?

You know, so often we don't know where our food comes from — even great chefs (don't). So why not go to the source? Why not see the meat or fish in its natural habitat, and learn how to treat the product the way it traditionally has been treated? I just thought I'd learn a lot and meet some great people along the way.

What did you learn about America from this journey?

America is so often considered a homogenous wasteland for culinary culture, but there are so many micro-regional cultures keeping it real, it's startling. What we so often think of as just fast-food culture is actually just the surface. Beneath that, you find regional delicacies like crawfish boudin and smoked turkey. There are dishes and meats in this country that have been cooked and taught to future generations for hundreds of years.

Which ingredients are most likely to end up in a grilled cheese or in a dining room?

Wild turkey or smoked hog screams for grilled cheese — not to mention any of the smoked meats from the Big Springs Trading Co. in Arkansas! The buffalo from Arkansas, with its delicate flavor and butter-like texture, could fit in any fine-dining menu nationwide.

What is the best city for meat that is overlooked?

I hear Lockhart, Texas, has too much barbecue, but I don't know if that's possible. This little town claims four of the top 10 Texas barbecue joints but has a population of only 11,000. That's special.

THE CHEF

Don't just watch 'EAT.' Eat 'EAT.'

Chef Eric Greenspan was asked to come up with six signature dishes for National Geographic Channel's *EAT: The Story of Food*. The dishes express the themes of the six episodes in the series: meat, seafood, grains, junk food, sugar, and food revolutionaries. Here are his recipes for each:

FOOD REVOLUTIONARIES: MINESTRONE

Ingredients:

- 1 octopus, 3-5 pounds
- 1 carrot, peeled and chopped
- 1 onion, medium dice
- 1 head (bunch) celery, chopped
- 1/2 bottle red wine
- 1 cup red wine vinegar
- 1 cup corn starch
- 1/2 pound pork tubed chorizo
- 3 pounds roasted red peppers
- 1 red onion, thinly sliced
- 1/2 cup toasted bread, small dice
- 1/2 cup precooked pasta, chopped
- 1/2 cup mixed beans (red kidney, navy, white, etc.), cooked
- 1/4 cup chopped parsley
- 1/4 cup oven-dried cherry tomatoes, halved

Instructions:

In a large sauce pot place octopus, carrot, onion, celery, wine and vinegar. Add water until octopus is covered. Salt liberally and simmer until tender, about 1 hour. Remove octopus, cool, and slice each tentacle on a bias into 2-inch pieces. Dredge in starch and deep fry until crispy. Set aside.

Pasta with butternut squash, porcini mushrooms and shaved black truffles.



The junk food pot pie is topped off with a dusting of Doritos powder.

In a medium saucepan, slowly render the chorizo until cooked. Add red onion and two-thirds of the peppers and cook until onion is translucent. Place chorizo, peppers and onions in a blender and blend smooth.

Add bread, beans, pasta, remaining red peppers, cherry tomatoes and herbs to sauce and simmer until all is warm and coated. Spoon into bowls. Cover with fried pieces of octopus.



PHOTOS BY NATIONAL GEOGRAPHIC TELEVISION

MEAT: STEAK

Ingredients:

- 5 tablespoons butter, cut into 1-inch cubes
- 1 New York steak
- Salt and pepper to taste
- 4 cloves garlic, smashed
- 3 sprigs thyme

Instructions:

Melt butter in cast-iron pan over medium-high heat. Season steak with salt and pepper and place in pan with smashed garlic and thyme sprigs. Cook about 5-10 minutes, continuously basting with butter, until a nice sear is formed. Flip steak and continue to baste, another 5-10 minutes, until steak reaches desired doneness. Remove from pan and allow steak to rest.

JUNK FOOD:

JUNK FOOD POT PIE

Ingredients:

- 1/4 cup butter
- 1/2 cup flour
- 2 cups milk
- 1 package onion soup mix
- 1 can mixed vegetables
- 1 cup frozen peas
- 1 package Spam, cut into 1-inch cubes
- 1 Slim Jim, cut into 1-inch sections
- 1 cup potato chips, crushed
- 1 refrigerated premade pie crust
- 1 egg for egg wash
- 1 tablespoon Doritos orange powder
- Baby carrots for garnish

► STORY CONTINUES ON 28



CUSTOM RECIPES



Chef Eric Greenspan devised a dish for each episode of *EAT: The Story of Food*. Above: steak for the episode about meat.

Let's 'EAT': 6 recipes in the spirit of the show

► CONTINUED FROM 27

Instructions:

Heat oven to 425°F. In 2-quart saucepan, melt butter over medium-high heat. Add in flour and stir frequently for about 2 minutes. Constantly whisking, gradually pour in milk and cook about 2 minutes or until slightly thickened. Stir in onion soup mix, vegetables, peas, Spam and Slim Jim. Remove from heat.

Spoon mixture into pie pan and sprinkle crushed potato chips over top of mixture. Top with premade crust, seal edge and flute. Cut slits into center top of crust. Brush with egg wash and sprinkle with Doritos powder. Bake 30-40 minutes or until crust is golden brown. During the last 15-20 minutes of baking, cover crust with strips of foil to prevent excess browning. Serve with roasted baby carrots.

SEAFOOD: FISH AND CHIPS

Ingredients:

1 bottle beer of your choice
1½ cups flour
¼ teaspoon salt



PHOTOS BY NATIONAL GEOGRAPHIC TELEVISION

Sugar, egg whites, a bit of cream of tartar, and an energetic whisking create the stiff peaks that mark a good meringue.



NATIONAL GEOGRAPHIC TELEVISION

1 pound cod fillets, cut into 1-inch strips
Tartar sauce
French fries for serving
Vegetable oil for frying

Instructions:

In a fryer, heat oil to 375°F. In a large bowl, pour in beer and gently whisk in sifted flour until lumps are removed. Stir in salt. Pat fish dry and coat fish in beer batter. Fry fish, turning over frequently until deep golden brown and cooked through, about 4-5 minutes. Serve with tartar sauce and french fries.

GRAIN: PASTA

Ingredients:

600 grams type-00 flour (about 4¾ cups)
½ teaspoon salt
6 eggs
4-6 tablespoons butter, cut into cubes
1 cup grated Parmesan cheese
2 cups roasted butternut squash (optional)
1 cup porcini mushrooms (optional)
Shaved black truffles (optional)

Instructions:

Bring a large pot of water to a boil. In large bowl combine flour and salt

and make a well in the center. Crack eggs into well. Using a fork, whisk eggs and slowly incorporate flour from the edges until dough forms. Add extra flour if dough is sticky, or water if it seems dry. Knead dough about 5 minutes until soft and smooth. Use a pasta machine to roll out pasta. Place rolled-out pasta in boiling water until cooked, about 3 minutes.

Meanwhile, in a saucepan melt butter over low heat. Using tongs, remove pasta from boiling water and place in saucepan with melted butter. Add Parmesan cheese and stir until cheese melts. If desired, add additional toppings such as roasted butternut squash, porcini mushrooms, and shaved black truffles.

SUGAR: BAKED ALASKA MERINGUE

Ingredients:

8 large egg whites
¾ cup sugar, super fine
½ tsp cream of tartar
¼ cup passion fruit puree

Instructions:

Using an electric mixer fitted with a whisk attachment, whisk egg whites, sugar, and cream of tartar on high until stiff peaks form. Fold in passion fruit puree.

CUSTOM RECIPES

EVERY HOUR IS HAPPY HOUR



C H U G

HOSTED BY ZANE LAMPREY

NEW SERIES

MONDAY NOV 24 10:30/9:30c

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PHOTOS BY MELISSA SCHULING, INZANE ENTERTAINMENT

Zane Lamprey and wife Melissa in Salzburg, Austria, one of the places Lamprey visited for *Chug*, his new show exploring drinking cultures around the world.

See the world and drink it all in



Spiler bar was a delight in Budapest, Hungary.

Comedian-turned-TV host **Zane Lamprey** is no stranger to hosting exotic, extreme, educational and enlightening television shows. He's earned himself a solid reputation as an on-camera expert on alcoholic beverages and is now taking his expertise around the globe in the new National Geographic Channel series *Chug*.

In *Chug*, Lamprey lets his thirst guide him in exploring local customs, food and, well, liquor. He travels by train to an array of exotic and boozy locations, interacting with the local culture and making new friends — or drinking buddies.

He talks about his adventures:

Your show is the first Kickstarter-funded series to air on a TV network. How did that idea come about?

I was talking to my mother on the phone one Sunday night in March (2013), telling her about how I had shopped the idea for *Chug* around to the networks with no luck. My mom suggested that I Kickstart it "like that *Veronica Mars* movie" (which raised \$5.7 million in a

month on the crowdfunding site).

Not knowing what it was, I told my mom that she should stick to snowy Syracuse, New York, politics and leave the Hollywood business to me. But after I hung up, I checked the *Veronica Mars* Kickstarter campaign, just to prove to myself how right I was. When the page came up, I dropped my beer. *Veronica Mars* had made twice their goal of \$2 million in the first few days. My tactics were now reassessed. I stayed up for hours, poring over Kickstarter campaigns and articles about fan funding, and then sent an e-mail to my employees, which basically said: "Tomorrow we start prepar-

► STORY CONTINUES ON 31

ON TV: CHUG



MEISSA SCHILING/INZANE ENTERTAINMENT

Zane Lamprey hoists a tankard with Brian Harrison and Richard Tamas at the Hero of Waterloo, a favorite watering hole on the harbor in Sydney, Australia.

Over a drink, international differences blur

► CONTINUED FROM 30

ing for Kickstarter campaign. In two weeks, we launch." And then, with three days left of the campaign, we exceeded our goal by \$91K. National Geographic Channel was excited about it, and that's where the show ended up.

Now, a year and a half since I had my phone call with my silly mom, we are nearing the premiere of the show, the first fan-funded television series ... ever.

In *Chug*, you sample the local libations of such places as Kuala Lumpur, Sydney, Fiji, Vienna, Rome and Budapest. What was your favorite place you visited?

I chose the locations for *Chug* based on a few criteria: How diverse is the local

drinking culture? Will we get the access we need to present the local libations in an entertaining way? And ... I could go anywhere in the world, where would it be? So, each of the places had the potential to be my favorite.

Kuala Lumpur was exotic and full of wonderful surprises — like monkeys! Sydney had the most fun people. Fiji was like a postcard, and home to the nicest people on the planet. Vienna had a rich beer culture ... and I love beer. Rome is gorgeous and full of history you can actually walk through. Budapest, however, was the sleeper. It had the perfect combination of beautiful scenery, rich drinking history and great people to share their

diverse local drinks with. So, I don't have a favorite place. But Budapest may be my favorite episode.

How do the drinking traditions in the USA differ from those you experienced around the world?

America is the world's melting pot, and that's no more evident than with drinks. Mexico has tequila, but sometimes you'd think it was ours. The same goes for champagne, vodka, beer, whiskey and any other beverage with alcohol. But drinking in other countries is a concentrated experience. It's the feeling you have when you walk into an Irish pub with dark wood walls, warm embers glowing in the fire-

place and a charming bartender with an Irish accent. But in other countries, that feeling doesn't leave you when you walk out of the bar.

What surprised you the most during your travels?

I've been traveling around the world, eating and drinking, for a decade. The one thing I've noticed that's no longer a surprise is how similar the people on this planet are. Sure, we may look different, talk differently and have different political leaders, but at the core, we're really the same. We want to find someone to love, provide for our families, enjoy life and have people listen to our ridiculous stories. Over a drink, our differences disappear, our inhibitions drop, the stories flow and the smiles appear.

CHUG PREMIERS NOV. 24
"Chug" premieres on National Geographic Channel on Monday, Nov. 24, at 10:30 p.m. ET/PT.

ON TV: CHUG

There are signs that Americans overall are getting a grip on their expanding waistlines for the first time in decades. But before anyone gets too optimistic, there

has also been a significant increase in

the number of Americans who edged into the worrisome category of "extremely obese."

The question, then, is which trend will prevail? Is there reason to hope that Americans are turning a corner on a major public health issue?

"Americans seem to have woken up to the fact that we've got a problem, and the leveling off in obesity rates is a very good thing," says obesity researcher **USA TODAY REPORT** Donna Ryan, a professor emerita at the Pennington Biomedical Research Center in Baton Rouge. "But there is still lots of hard work to do to get people to healthier weights."

Government data suggest that obesity among U.S. adults is continuing to level off after several decades of skyrocketing growth. In 2012, about 34.9% of Americans were obese. That was not significantly different from the 35.7% who were obese in 2010, says Cynthia Ogden, an epidemiologist and branch chief with the National Center for Health Statistics, part of the Centers for Disease Control and Prevention.

Adults are considered obese if they have a body mass index (BMI) of 30 or greater. BMI takes into account height and weight. It measures body mass; it doesn't distinguish between fat and muscle. A 5-foot-4 adult would be classified as obese if he or she weighed 174 pounds or more; a 5-foot-9 adult would fall into that category at 265 pounds or more.

At the same time, another disturbing trend is emerging. The percentage of people who are extremely obese — roughly 100 pounds over a healthy weight — rose from 2.8% in 1994 to 4.8% in 2004 to 6.4% in 2012. A person is deemed extremely obese with a BMI of 40 or greater.

'NOTHING TO BRAG ABOUT'

The prevalence of obesity increased dramatically in the 1980s and 1990s after being relatively stable in the USA from 1960 to 1980, when about 15% of people fell into the category.

Obesity may be leveling off, "but with more than a third of the U.S. population in this category, it's nothing to brag about," Ryan says. Many people who are obese



MARK LEHRMAN/AP

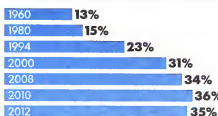
About two-thirds of U.S. adults are overweight, more than a third are obese, and the percentage who are considered "extremely obese" is increasing.

'Good news' on obesity is all relative

Rates level off, but the problem is getting bigger in different way

OBESITY OVER TIME

Percentage of U.S. adults who were obese in:



Source: National Center for Health Statistics
GEORGE PETRAS, USA TODAY

"have or will have health problems because of excess weight," she says.

Obesity contributes to a long list of serious health problems including type 2 diabetes, cardiovascular disease, liver problems, degenerative joint disease and some types of cancer.

"You do not need to lose all of your excess weight to get important health benefits," says Samuel Klein, director of the Center for Human Nutrition at Washington University School of Medicine in St. Louis.

"The metabolic complications of obesity, such as increased blood pressure, high blood triglycerides, abnormal blood sugar and increased liver fat, can improve with only a 2% decrease in body weight, and continue to improve with greater weight loss. This means obese people who lose a small amount of weight are and are able to keep it off will improve their health, even though they are still obese."

DOCTORS IN CRISIS MODE

Overall, about two-thirds of U.S. adults — nearly 165 million — are overweight or obese. Doctors are being urged to help tackle obesity as aggressively as high blood pressure, says Ryan, co-chairwoman of a committee that released obesity treatment guidelines for the Obesity Society, the American Heart Association and the American College of Cardiology.

Those guidelines say there's no ideal diet for everyone, but doctors need to help obese patients figure out the best plan for them, whether it's a vegetarian diet, low-sodium plan, commercial weight-loss program or low-carb diet. Health care providers should encourage obese and overweight patients who need to drop pounds for health reasons to lose at least 5% to 10% of their weight by following a moderately reduced-calorie diet suited to their tastes and health status, while being physically active and learning behavioral strategies.

Diet alone is not recommended, the guidelines says. People should do moderate physical activity, working up to at least 150 minutes per week. They should also get behavioral counseling.

"Weight loss isn't easy — it's hard work," Ryan says. "But the payoff for learning new behaviors to sustain a healthier weight is a big improvement on blood sugar control, blood pressure control and lipid control, along with more energy, better mobility, improved mood and a real bonus: Patients are likely to need fewer medicines and smaller doses."

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Changing markets challenge farmers

Consumers' attitudes about food have shifted

Dawn breaks at the Dammann family farm in Page County, Iowa. The Dammanns are growing corn for a processor that won't accept genetically modified grain.

Sharyn Jackson
USA TODAY

Tassel-topped stalks across the Midwest corn belt await a harvest of grain that will fuel your car with ethanol, feed the livestock that becomes your dinner steak or be processed into foods lining shelves at your supermarket.

In the lush fields of a Page County farm in southwestern Iowa, though, the white corn kernels almost ready for harvest are aimed at a specific audience: people who don't want to eat food that has been genetically modified.

It's the first season that the Dammann family, which has worked this land for six generations, has produced a crop to meet demand from that segment of the market.

Consumers' growing desire to know where their food comes from and how it is grown is prompting large-scale farms to adjust to more food-conscious markets, following the path of smaller operations that sell directly to customers.

"We now have an engaged public that is reconnecting and thinking about food,"



Denny Wimmer, 58, grows organic vegetables, including these green beans, on his family's 76 Iowa acres. His father, Don, 88, was born on the farm in 1926 and ran a conventional operation there until he retired.

says Matt Russell, policy project coordinator at Drake University's Agricultural Law Center in Des Moines. "That opens up a whole political process and a market process that makes industrial agriculture more responsive."

This is just one of the tremendous market- and demographic-driven shifts that are changing the face of American agriculture. Among the others:

- The age of farmers continues a 30-year climb. The average farmer is now 58.3 years old — more than 20 years older than the national median age.

- Technology allows each farmer to handle more acres or more livestock. The downside: a trend toward ever-larger operations that squeeze out smaller farms. Sixty-six percent of all agricultural products sold in 2012 were produced by the largest 4% of U.S. farms, according to the U.S. Census of Agriculture.

- More minority farmers are working the land. Among 2.1 million principal farm operators in 2012, almost 8% were minorities, according to the agricultural census. Farms operated by Hispanics, the

► STORY CONTINUES ON 35

SPECIAL REPORT



Justin Dammann surveys a pasture with his dog, Blaze, on his farm in rural Page County, Iowa. Dammann says it doesn't matter why consumers' expectations are changing; it's his job to meet those expectations. "What was in yesterday is out," he says.

CHRISTOPHER GANNON,
THE DES MOINES
REGISTER

Farms evolve to suit changing attitudes

► CONTINUED FROM 34

country's largest minority group, saw a 21% increase over five years.

► Climate change may lead to more intense and frequent flooding, droughts, hurricanes and tornadoes. Experts predict climate change will increase the pests, weeds and plant and animal diseases that farmers must fight. That could result in lower yields or even the economic shock of crop failures.

Amid all the challenges, farmers find lucrative markets shaped by shifting consumer tastes. Farmers' markets, where consumers can interact directly with the growers of their food, grew steadily in number from 1994 to 2014, almost quintupling to 8,268, according to the U.S. Department of Agriculture.

In 2012, fresh fruits and vegetables sold directly to consumers were a \$1.3 billion industry, up 8% since 2007, the census found. That same year, organic food sales reached about \$27 billion, according to the USDA, up from \$11 billion in 2004.

Consumers around the world, including an expanding middle class in China,

drive demand for American exports, an opportunity to increase income for American producers. But a worldwide market also exposes American farmers to global crises — and global opinions.

For the first time this fall, the Mexican-based processing company where the Dammanns and other southwest Iowa farmers send their corn will accept only corn grown from seed that hasn't been genetically modified, says Scott Roberts, national procurement manager for Mina. The company, which has mills in Texas and Iowa, aims to reach more European and U.S. markets. "The demand seems to be there," Roberts says. "We're just trying to get ahead of the market."

Justin Dammann, owner of the Dammann family farm, said he doesn't care whether demand for non-genetically modified food is founded in science or politics or is just a fad.

"What was in yesterday is out," he says, "but we've got to keep up with all that, because we're raising what people want to buy and eat."

Jackson also reports for The Des Moines Register

Get a virtual view of life on a modern farm

In a first-of-its-kind explanatory journalism project, *The Des Moines Register* and Gannett Digital have partnered to tell the story of an Iowa farm family, using emerging virtual reality technology and 360-degree video.

The "Harvest of Change" project takes viewers on a virtual tour of a family farm in southwestern Iowa. It's best viewed with an Oculus Rift, a virtual reality headset produced by Oculus VR of California.

In our project, viewers can take an immersive tour of the farm, rendered in 3-D using the Unity video game engine.

Total Cinema 360, a New York City film company, shot the videos using cameras that record images and sound

in all directions at once. When watched via the Oculus Rift, the video appears to surround the viewer. Turn your head (or move your mouse) in any direction to see what's happening around you.

About 125,000 Oculus Rift development kits have been sold.

If you own one, you can download our Oculus version of the VR farm experience at desmoinesregister.com. For everyone else, we've built two-dimensional versions. You can download applications for PC and Mac (requiring a speedy computer and graphics card), or you can watch a "light" version in a Web browser after downloading a Unity 3-D plug-in.

By Anthony DeBarros

SPECIAL REPORT



Retirees Bob and Marie Langworthy of Columbia, Conn., say they eat at restaurants at least twice a week. They acknowledge they could save money — “a bundle,” Marie says — by eating at home. But dining out is about more than eating, it’s a social activity. Besides, Marie jokes, Bob would prefer anything to her cooking.

BRADLEY E. CLIFT FOR USA TODAY

Retirees make eating out a priority

Some like the social aspect, while others are simply ‘done with cooking forever’

Nanci Hellmich
USA TODAY

Marie Langworthy, 68, and her husband, Bob, 75, of Columbia, Conn., love to dine out. They usually do so at least twice a week, often for dinner or a late lunch.

Marie hates to cook and tries to avoid it at all costs. “My husband prefers anything

to my cooking,” she says. “The surest way to get your husband to take you out to eat is to be a lousy cook.”

“We always spend more than we’d like to or anticipate, because Bob enjoys wine or hard liquor with his meal, and I always opt for dessert,” says Marie, a retired school administrator and co-author of *Shifting Gears to Your Life and Work After Retirement*.

She says they could probably “save a bundle” if they ate more meals at home, but they have no plans to cut back on dining out anytime soon. “First of all, eating out has become a great American

“In an industry that is suffering, retirees are a bright spot.”

Harry Balzer,
restaurant industry analyst for NPD Group

social pastime. Secondly, it allows each of us to pick and choose what we want without our needing to plan and prepare meals in advance.”

Retirees over the age of 65 bought an average of 193 meals each at restaurants last year, up from 171 in 2009, according to the latest data from the NPD Group, a market research firm that tracks eating trends. That’s slightly less than the average for all adults: 203 meals at restaurants last year, down from 222 meals in 2009.

“In an industry that is suffering, retirees are a bright spot,” says Harry Balzer,

► STORY CONTINUES ON 37



PHOTO BY BRADLEY E. CART FOR USA TODAY

The Langworthys enjoy a meal at one of their favorite places, the Lake View Restaurant in Coventry, Conn., where they're on a first-name basis with the owners.

Coupons, half portions stretch dining dollars

► CONTINUED FROM 36

NPD's chief industry analyst. The average restaurant check for a retiree is \$8.05, vs. \$7.33 for all adults.

Retirees go fast-food places 63% of the time; 97% of the time they go to places with wait staff, Balzer says.

When it comes to spending money on dining out, retirees have to prioritize what matters to them and budget accordingly, says Gary Schatsky, a New York City financial planner and president of ObjectiveAdvice.com. For many people, dining out feels like a mini vacation, and they really enjoy it, he says.

For some people, having alcohol with their meal is an important part of the experience. But Schatsky points out that if you don't buy alcohol, you can afford more dinners out. Even choosing to drink water rather than soft drinks at meals can save a lot of money over time, he says.

Mark Fried, president of TFG Wealth Management in Newtown, Pa., says that when he reviews budgets with retirees, they often make dining out a line item,

meaning it's important enough to make it a priority and to budget for it. "How much money they have determines where they are going to eat out," Fried says.

Some want to dine out occasionally, but others say they are "done with cooking forever and want to eat out every night."

PRICE MATTERS

Many retirees are price-conscious, and they want the option to smaller portions, says Reimund Pitz, chef and owner of Le Coq au Vin restaurant in Orlando. "These folks can't eat like they used to." So Pitz offers half portions at a reduced price.

There are creative ways to eat out frequently without busting the budget. Nelson Cooney 76, of Bethesda, Md., and his wife, Joan, 78, dine out two to three times a week, so he searches for discounts on Groupon and LivingSocial, and they sometimes go to happy hours at restaurants where the wine is less expensive and the bar food can serve as their dinner.

"I don't like to overspend when I don't have to. We only use [discount coupons] to go to places we want to go to. We don't



Marie says the couple "would travel anywhere, any distance, for a good meal and a new ambient experience."

go places we don't care about. We're very selective," Nelson Cooney says.

Carol Miller, 74, a retired schoolteacher in Terrell, N.C., likes to order takeout from a cafe in town and bring it home "to sit in my recliner and eat." She spends about \$12 or so on a takeout dinner, which is enough food for two to three meals. It's very economical and tastes great, she says.

"I could never replicate their food. She also goes out to dinner regularly

with several different groups of women, including some from her church, retired teachers and old friends. "For women my age, going out to eat is a sort of tribal thing that women do, and generally it's with people you love, so you can talk to them and complain to them."

"Sometimes I think, 'I just ate out yesterday,' but I go ahead and go again. I don't like to cook. It doesn't interest me."

Her husband did the cooking, but he passed away three years ago. Eating out is a good way for retired people to "reconnect," Miller says. "You could very easily stay in your house and cook a grilled cheese or a TV dinner. You could become a hermit if you don't watch out."

Marie Langworthy says sometimes she and her husband go out for the "early bird" specials to save money, but they often pay full price. She loves eating outdoors in the summer at casual "shack-like" restaurants with high-quality food. "I also love to try different high-end restaurants, and would travel anywhere, any distance, for a good meal and a new ambient experience."

Akitchen makeover might be the first step to losing weight.

If you declutter your kitchen, you're likely to snack about half as much when you're there, and if you don't keep breakfast cereal on the

Nanci Hellmich
USA TODAY

counters, you may weigh about 20 pounds less than your neighbor who has cereal in plain

view, says one of the nation's top researchers on eating behavior.

"It's easier to become slim by design than slim by willpower," says Brian Wansink, director of Cornell University's Food and Brand Lab and author of *Slim by Design: Mindless Eating Solutions for Everyday Life* (slimbydesign.org). He also wrote *Mindless Eating: Why We Eat More Than We Think*.

For years, Wansink has been on a mission to ferret out environmental factors that encourage Americans to eat too much. "We're all mindless eaters," he says.

He has found that people make more than 200 decisions about food every day, including what and when to eat, how many bites to take of different foods and whether to get seconds. And he has determined that people typically eat about 92% of the food they put out on their plates.

Wansink has been studying eating behavior for 25 years, and he and colleagues have conducted hundreds of studies on how and why people eat. He offers these ideas for a kitchen makeover:

► **Move healthier foods to more visible spots.** Rearrange your cupboards, pantry and refrigerator so the first foods you see are the healthier ones.

In one study, Wansink and colleagues asked people to move fruits and vegetables from the crisper bins to the top shelves of their refrigerators and move the less-healthy foods to the crisper. After one week, people reported eating nearly three times as much fruit and vegetables as they did the week before. "We might think we are keeping fruits and vegetables fresher longer in the crisper, but our goal is to eat them, not compost them."

He suggests having a bowl with two or more types of fruit in plain view in the kitchen and at work. He started doing that; now, "I eat more fruit than 'Parzan.'"

► **Make tempting foods invisible and inconvenient.** Don't have any foods other than fruit visible in the kitchen. That means not keeping any cereal, baked goods, chips or muffins out on the counters or the table, he says.

He and fellow researchers visited more than 200 kitchens in homes and photographed them extensively, including taking pictures of the dishes, refrigerator shelves, counters and snacks. They also measured the height and weight of the person who bought food for his house.

Among their findings: Women who had even one box of breakfast cereal visible anywhere in the kitchen weighed an average of 21 pounds more than those



Clean up, slim down? Research suggests that people eat less in a neat and orderly kitchen than in one that's cluttered. LAWRENCE ANDERSON, AP

Reorganize your kitchen to control your weight



DACOR/VIEWNEWSWIRE

Out of sight, out of mouth: Fruit should be the only food readily visible in a kitchen, a top researcher says.

who didn't have any cereal in plain view.

► **Declutter your kitchen.** His research shows that cluttered kitchens lead people to eat 44% more of their snack foods than in a kitchen that's organized and decluttered. This means putting away things such as the toaster, cutting board and knives. "Where a more organized kitchen may prompt self-control, a disorganized one does the opposite."

► **Make your kitchen less suited for lounging.** The more you hang out in

your kitchen, the more you'll eat, so don't have comfy chairs, TVs, computers or tablets in the kitchen, Wansink says.

► **Think twice about buying big packages.** His research shows that people eat more from bigger packages than smaller ones. His advice: Repackage bigger boxes into single portions.

► **Use smaller serving bowls and spoons.** In one study, Wansink had nutrition professors serve themselves ice cream using different sizes of spoons and bowls. They ate 54% more ice cream when they used bigger bowls and spoons, "and these are people who should know better," he says. Other studies show similar results with children and cereal.

► **Use smaller, narrower drinking glasses.** Wansink's research shows that people pour themselves more when they're using a 16-ounce glass — the typical size of many kitchen glasses — than 12-ounce glass. Even more surprisingly, they pour more in a 12-ounce wide glass than a 12-ounce narrow glass. So, to consume less of high-calorie drinks, such as soda and sugary tea, use the smaller, narrower glasses, but for healthy drinks such

as water, use the bigger glasses, he says.

► **Serve food from the counter or the stove.** In another study, Wansink found that people ate 19% less food when they served themselves from bowls on the counter or stove vs. having serving bowls on the table. "People, especially guys, tend to serve themselves again and again when the food is right in front of them."

► **Avoid doing other activities while eating.** Research shows that the more people report watching TV during dinner, the higher their body mass index (a measure of weight relative to height).

When Wansink gave moviegoers 5-day-old stale popcorn, they ate an average of 173 calories more from a big bucket than a medium one. Even as they complained that the popcorn tasted horrible, Wansink says, they continued to eat while watching the movie. "We tend to mindlessly eat while we're doing other activities. The cue that we are 'finished' eating is that our food is gone."

Rethinking your kitchen can help you reach a healthy weight, he says. "Slim by design is forever: slim by willpower can be wimpy and has to last a lifetime."

Eating too much added sugar may be killing you

Researchers see a link between high intake and fatal heart disease

Nand Hellmich
USA TODAY

Sugar might not just be making you fat. It might be killing you. Consuming too much added sugar — in soft drinks, cakes, cookies and candy — increases your risk of dying from heart disease, according to a study that looked at tens of thousands of people, the largest study of its type.

"The risk of cardiovascular disease death increases exponentially as you increase consumption of added sugar," says Quanhe Yang, a senior scientist with the Centers for Disease Control and Prevention and the study's lead author.

On average, adults in the USA in 2010 consumed about 15% of their daily calories — about 300 calories a day, based on a 2,000-calorie diet — from added sugars.

That's far more than the American Heart Association's recommendations that women consume no more than 100 calories a day from added sugars and men consume no more than 150 calories a day. A teaspoon of table sugar has about 16 calories.

Added sugars include table sugar, brown sugar, high-fructose corn syrup, maple syrup, honey, molasses and other caloric sweeteners in prepared and processed foods and beverages. It does not include sugars that occur naturally in fruits, juices, milk and dairy products.

"Major sources of added sugars in Americans' diets are sugar-sweetened beverages, grain-based desserts, fruit drinks, dairy desserts (ice cream) and candy," Yang says. "One can of regular soda (12 oz.) contains about 140 calories of added sugar. That's about 7% of the daily calories of someone eating 2,000 calories a day."

Other research has tied a high intake of added sugars, especially in beverages, to conditions such as obesity, high blood pressure, type 2 diabetes and risk factors for heart disease and stroke. Most of those studies focused on sugared beverages, not total intake of sugar, Yang says. "Ours is the first study using a nationally representative sample to look at the total



TED S. WARREN/AP

amount of added sugar and the association to cardiovascular disease death."

To look at trends in added-sugar intake, Yang and colleagues reviewed data from more than 31,000 people over the years who participated in the National Health and Nutrition Examination Survey, which evaluates dietary habits based on in-person interviews. They found that most adults (71%) consume 10% or more of their daily calories from added sugars. About 10% of adults consume 25% or more of daily calories from added sugars.

The researchers looked at data on deaths from heart disease (heart attacks, stroke, heart failure, hypertension), and they examined the association between added sugar consumption and death from heart disease based on more than 12,000 people with complete mortality information. They controlled their results for a wide range of other risk factors, including high blood pressure, total cholesterol, smoking, physical activity, diet and weight. Among their findings:

► People who consumed more than 21% of daily calories from added sugar had double the risk of death from heart disease as those who consumed less than

"Now we know that too much added sugar doesn't just make us fat; it increases our risk of death from heart disease."

Rachel Johnson, American Heart Association

10% of calories from added sugars.

► People who consumed 17% to 21% of daily calories from added sugar had a 38% higher risk of death from heart disease than people who consumed less than 10% of calories from added sugars.

► People who consumed seven or more servings a week of sugar-sweetened beverages were at a 29% higher risk of death from heart disease than those who consumed one serving or less.

► Added sugar intake as a percentage of daily calories has changed little over the past 20 years, from 16% in 1988-1994 to 17% in 1999-2004 to 15% in 2005-2010.

The paper's senior author, Frank Hu, a professor of nutrition and epidemiology

at the Harvard School of Public Health, says excessive intake of added sugar appears to negatively affect health in several ways. It has been linked to the development of high blood pressure, increased triglycerides (blood fats), low HDL cholesterol (the "good" cholesterol) and fatty liver problems, as well as making insulin less effective in lowering blood sugar.

Rachel Johnson, a spokeswoman for the American Heart Association and a nutrition professor at the University of Vermont, says, "Now we know that too much added sugar doesn't just make us fat; it increases our risk of death from heart disease."

Andy Briscoe, president and CEO of the Sugar Association, says that this is an observational study that doesn't prove cause and effect.

"Attempts to reconcile the correlation being drawn between sugar (sucrose) and cardiovascular health is simply not supported by scientific evidence," Briscoe says. "Bottom line: All-natural sugar has been consumed safely for centuries, and when consumed in moderation, has been and should continue to be part of a balanced diet and healthy lifestyle."

Research shows that the average American gets about 300 calories a day from added sugars — that is, sugars added to foods during processing or preparation. At left, a vendor at a baseball game in Seattle sells cotton candy, whose main ingredients are sugar, sugar and more sugar.

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